

LARVAL DESCRIPTION AND HABITAT NOTES OF THE
FISHFLY *NEOHERMES CONCOLOR* (DAVIS)
(MEGALOPTERA: CORYDALIDAE)¹

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ABSTRACT: Larval fishflies (*Neohermes concolor*) were collected under leaf litter near a spring seep in the Cherokee National Forest, Polk Co., Tennessee. Following a laboratory pupation period of one month, one adult male and female emerged in the rearing cage. A detailed description of the morphology of the larval stage is presented in this paper.

Three eastern genera of fishflies, *Chauliodes* Latrielle, *Nigronia* Banks and *Neohermes* Banks, are found in the subfamily Chauliodinae. Banks (1908) erected the genus *Neohermes* for some American species then placed in the genus *Chauliodes*. Based on the genitalia of eastern and western adults of *Neohermes*, Flint (1965) recognized five species in the genus: *N. filicornis* (Banks) and *N. californicus* (Walker), both from western North America; and *N. angusticollis* (Hagen), *N. matheri* Flint, and *N. concolor* (Davis) from eastern and central North America. Baker and Neunzig (1968) reared first-instar larvae of *N. concolor* from laboratory reared egg masses, but older larvae have remained unknown for the three eastern species.

Other authors, including Tarter et al. (1977), Knight and Siegfried (1977), Tarter et al. (1976a, b), Watkins et al. (1975), Tarter et al. (1975), Peterson (1974), Tarter and Watkins (1974), Cuyler (1965), Neunzig (1966), Hazard (1960) and Parfin (1952), have reported distributional, taxonomic and ecological information on fishflies in eastern North America.

Based on the adult male, *Neohermes concolor* has been recorded from 21 states in the central, northeastern and southeastern portions of the United States (Flint, 1965; Tarter et al., 1976a, b). The emergence period ranged from 21 April (Pennsylvania) to 19 August (New York) (Tarter et al., 1976b). In eastern Kentucky (Boyd County), Tarter et al. (1976a) noted that emergence occurred from 12 June to 16 July, and peaked in early July.

Chauliodes larvae can be identified by a pair of long, unequal respiratory tubes containing the spiracles of the 8th abdominal tergite. The body is without papillae, or with only a few on the posterior part of abdomen. In *Nigronia* larvae these respiratory tubes are shorter and equal in length, and

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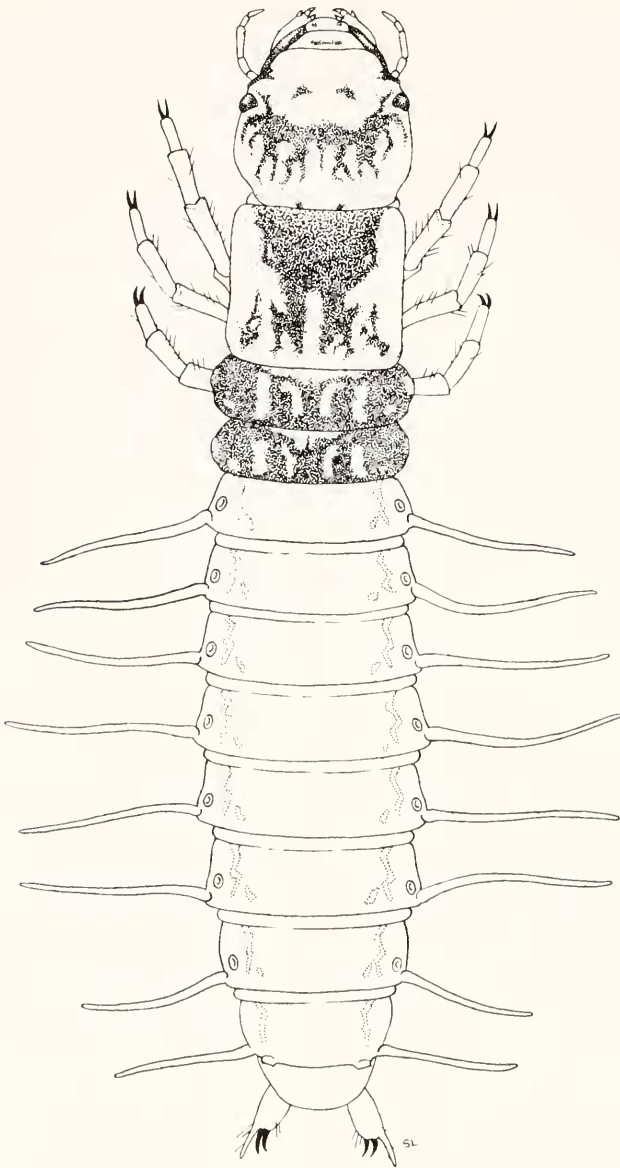


Figure 1. Larval stage of the fishfly *Neohermes concolor*.

the body is covered with papillae. *Neohermes* larvae lack respiratory tubes on the 8th abdominal tergite; the spiracles are sessile (Fig. 1).

On 16 April 1977, three larval fishflies were collected under leaf litter near a spring seep in the Cherokee National Forest, Polk Co., Tennessee, and returned to the laboratory at Marshall University. Following a pupation period of one month, one adult male and female emerged. Earlier instar larvae were collected from the same habitat.

Neohermes concolor

Chauliodes concolor Davis, 1903, Bull. N.Y. State Mus. 68:462. Specimen Described.—One mature larva (19.6 mm) (Fig. 1) collected at the Cherokee National Forest Campground, Polk Co., about 3 mi off U.S. 411 on Tennessee Route 30, under leaf litter near a spring seep 13 March 1976.

Head. — Length, 4.18 mm; Width, 3.71 mm; Labrum, length 0.33 mm and width 1.08 mm, light brown with two dark brown spots on lateral lobes of anterior margin, one long seta per dark spot and six setae on anterior border; clypeus light brown with yellowish margins; frons light brown; vertex light brown with few dark brown areas; occiput yellow with distinct brown pattern; antenna five segmented, basal segment 0.26 mm, 2nd segment 0.34 mm, 3rd segment 0.61 mm, 4th segment 0.21 mm, and 5th segment 0.26 mm; mandibles dark brown distally, asymmetrically toothed.

Thorax. — Pronotum width 3.90 mm, length 3.30 mm, yellow with dark brown pattern; mesonotum width 4.00 mm, length 1.63 mm, dark brown with two curved yellow areas medially and two straight yellow areas laterally; metanotum width 4.05 mm, length 1.38 mm, pattern similar to mesonotum; thoracic legs yellowish, numerous setae on femur, tibia, and tarsus.

Abdomen. — Length, 9.1 mm; light brown dorsally with yellowish markings near spiracles; lateral appendages yellow with a light brown coloration at the base dorsally and slightly longer than width of segment; no respiratory tubes on 8th tergite, spiracle sessile (Fig. 1).

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REFERENCES

- Baker, J. R., and H. H. Neunzig. 1968. The egg masses, eggs, and first-instar larvae of eastern North American Corydalidae. *Ann. Ent. Soc. Amer.* 61:1181-1187.
- Banks, N. 1908. On the classification of the Corydalinae, with description of a new species. *Proc. Ent. Soc. Wash.* 10:27-30.
- Cuyler, R.D. 1965. The larvae of *Nigronia fasciatus* Walker (Megaloptera: Corydalidae). *Ent. News* 76:192-195.
- Davis, K. C. 1903. Sialididae of North and South America. *In* Aquatic insects in New York State, Bull. N.Y. State Mus. 68:442-487.
- Flint, Jr., O.S. 1965. The genus *Neohermes* (Megaloptera: Corydalidae). *Psyche* 72: 255-263.
- Hazard, E.I. 1960. A revision of the genera *Chauliodes* and *Nigronia* (Megaloptera:

- Corydalidae). Unpub. Master's Thesis, Ohio State University. 52 pp.
- Knight, A.W., and C. A. Siegfried.** 1977. The distribution of *Corydalis cornutus* (Linnaeus) and *Nigronia serricornis* (Say) (Megaloptera: Corydalidae) in Michigan. Great Lakes Entomol. 10:39-46.
- Neunzig, H.H.** 1966. Larvae of the genus *Nigronia* Banks (Neuroptera: Corydalidae). Proc. Entomol. Soc. Wash. 68:11-16.
- Parfin, S.J.** 1952. The Megaloptera and Neuroptera of Minnesota. Amer. Midl. Nat. 47:421-434.
- Peterson, R.C.** 1974. Life history and bionomics of *Nigronia serricornis* (Say) (Megaloptera: Corydalidae). Unpub. Doctoral Dissertation, Michigan State University. 210 pp.
- Tarter, D.C., and W.D. Watkins,** 1974. Distribution of the fishfly genera *Chauliodes* Latreille and *Nigronia* Banks in West Virginia (Megaloptera: Corydalidae). Proc. W. Va. Acad. Sci. 46: 146-150.
- _____, W.D. Watkins, and M.L. Little. 1975. Life history of the fishfly *Nigronia fasciatus* (Megaloptera: Corydalidae), Psyche 82:81-88.
- _____, W.D. Watkins, and M.L. Little. 1976a. Distribution, including new state records, of fishflies in Kentucky (Megaloptera:Corydalidae). Trans. Ky. Acad. Sci. 37:26-28.
- _____, W.D. Watkins, M.L. Little, and J.T. Goodwin. 1976b. New state records of fishflies (Megaloptera: Corydalidae). Ent. News 87:223-228.
- _____, W.D. Watkins, M.L. Little, and D.L. Ashley. 1977. Seasonal emergence patterns of fishflies east of the Rocky Mountains (Megaloptera: Corydalidae). Ent. News 88:69-76.
- Watkins, W.D., D.C. Tarter, M.L. Little, and S.D. Hopkin.** 1975. New records of fishflies for West Virginia (Megaloptera: Corydalidae). Proc. W. Va. Acad. Sci. 47:1-5.